R.G. HALEY SITE
FEASIBILITY STUDY SCOPE OF WORK

PURPOSE

The purpose of this FS Scope of Work (FSSOW) for the R.G. Haley Site is to implement the Agreed Order (AO) entered into by Washington State Department of Ecology (Ecology) and Douglas Management Company (Douglas), to which this FSSOW is an Exhibit.

The FS is intended to provide sufficient engineering evaluations to enable Ecology to select a cleanup action alternative for the upland and aquatic portions of the Site. It will include an evaluation of the protectiveness and environmental effects of the cleanup action and any necessary mitigation, and provide reasonable assurance that applicable laws will be met.

TASK 1 FS PROGESS REPORTS

Douglas shall submit progress reports regarding the FS every two months unless a longer reporting period is approved by Ecology in writing. These progress reports may be combined with other progress reports required under the AO, if desired by Douglas, or by Ecology. Progress reports shall be submitted to Ecology until Section VI of the AO is satisfied. The progress reports shall be submitted by the 10th of every second month following the effective date of the AO. If this day is a weekend or holiday, deliverables will be submitted to Ecology on the next business day. At a minimum, progress reports shall contain the following information regarding the preceding reporting period:

- A description of the actions that have been taken to comply with the AO and FSSOW during the previous reporting period;
- An estimate of the percentage of FS work completed to date;
- Summaries of deviations from approved Work Plans;
- Summaries of the problems or anticipated problems in meeting the schedule or objectives set forth in the FSSOW and FS Work Plan;
- Summaries of solutions developed and implemented or planned to address any actual or anticipated problems or delays; and
- A description of applicable work planned for the next reporting period.

TASK 2 FS WORK PLAN

In order to plan and manage the FS, Douglas shall document project tasks and management strategies in a FS Work Plan. This Work Plan shall include an overall description and schedule of all FS activities. The Work Plan shall not be implemented until approved by Ecology.

The FS Work Plan shall specify and describe all tasks to be accomplished to complete the FS, including the evaluation of cleanup action alternatives and the identification of a preferred cleanup action alternative (if appropriate), in accordance with the AO, and this FSSOW.

The FS Work Plan shall clearly describe the overall project management strategy for implementing and reporting on FS activities. The responsibility and authority of all organizations and key personnel involved in conducting the FS will be outlined.

Elements of the FS Work Plan will include, but not be limited to, the following:

- A project management strategy for achieving timely submittal of high quality deliverables;
- A draft outline of the final FS report including the types of data evaluation, figures, and tables that will be included;
- A review of data developed during the RI that is pertinent to the development of FS tasks;
- A description of individual FS subtasks;
- A proposed schedule, including a timeline for completion of all FS subtasks and for submittal to Ecology of interim and final deliverables, including but not limited to the deliverables enumerated in this FSSOW;
- The proposed composition and individual qualifications of a technical team or teams of personnel and/or contractors responsible for FS subtasks; consultants used by Douglas under this AO shall have demonstrated experience pertinent to the completion of the FS tasks.

TASK 3 SITE FEASIBILITY STUDY

Douglas shall use the information obtained during the upland and sediment investigations to conduct a FS. The FS will include: the determination of cleanup standards and applicable laws, identification and screening of cleanup technologies, assembly and screening of cleanup action alternatives, a detailed evaluation of remaining alternatives and the identification of a preferred cleanup action alternative. The FS will contain sufficient data and evaluations to enable Ecology to select a preferred cleanup action alternative. A no-action alternative is also part of a FS evaluation process.

CLEANUP STANDARDS

The Model Toxics Control Act (MTCA) specifies a process for developing cleanup standards for media other than sediment (soil, groundwater, surface water and air). Cleanup standards selected under MTCA will generally apply to the upland portion of the site and will consist of two components: cleanup levels and points of compliance. MTCA (WAC 173-340-350) states that the purpose of the FS is to develop and evaluate cleanup alternatives to enable a cleanup action to be selected for the site. If concentrations of hazardous substances do not exceed the cleanup level at a standard point of compliance, no further action is necessary. MTCA (WAC 173-340-350 (7)(c)(iii)(F)) states that remedies that are protective of human health must also be protective of ecological receptors.

The Sediment Management Standards (SMS) specify a process for developing cleanup standards for sediment. The SMS (WAC 173-204-570) provide for site cleanup standards that may range from sediment quality standard (SQS) to minimum cleanup level (MCUL) concentrations. The potential for natural recovery over a 10-year time frame may also be considered, if appropriate. Site units may be defined for areas of the site if physical, chemical or biological differences (e.g. navigation lanes, intertidal areas) at the site create requirements for using different remediation levels or technologies. Determination of sediment remediation levels will consist, at a minimum, of the following steps:

- Define site units; remediation levels may be different for each site unit.
- Cleanup to MCUL is considered the minimum goal for active remediation of all sediment cleanups. If a less stringent remediation level is requested, an evaluation will be performed during the FS after cleanup action alternatives have been identified. The evaluation will weigh

costs, net environmental benefits and technical feasibility of the various possible remediation levels.

- A site-specific natural recovery evaluation may be used to select the time frame, between 0 and 10 years, for achieving sediment cleanup standards (Sediment Quality Standards).

IDENTIFICATION AND SCREENING OF CLEANUP TECHNOLOGIES

The cleanup technologies appropriate for use must be identified before cleanup alternatives can be developed. The following basic steps will be completed to identify and screen cleanup technologies for affected media.

1. Identify cleanup technologies based on cost, net environmental benefit, and technical feasibility.
2. Evaluate implementability of the identified cleanup technologies. Specific identified cleanup technologies can be eliminated from further consideration on the basis of technical implementability or if the cost of the technology is demonstrated to be disproportionate to the resulting environmental benefit. This initial screening step will consider the following information:
   - Contaminant distribution.
   - Contaminant concentrations.
   - Physical characteristics of the site and affected media.

ASSEMBLY AND SCREENING OF CLEANUP ACTION ALTERNATIVES

After applicable cleanup technologies have been identified, the technologies can be assembled into cleanup action alternatives and further defined for evaluation. Details of these steps are provided below:

1. Assembly of alternatives – Assembly of cleanup alternatives will begin by identifying the general response actions that may be used for cleanup at the site. Appropriate cleanup technologies (for each site unit if applicable) will then be identified based on the contaminants and other important considerations. General response actions and cleanup technologies for all site units will be considered as a whole system to ensure that they will work together. The primary considerations in combining technologies will be the overall effectiveness in providing a benefit to the environment and the ability to implement the cleanup alternative.
2. Screening of alternatives – The cleanup action alternatives will be screened to ensure that they will meet cleanup standards and other basic requirements. Prior to conducting the screening, the following information will be determined for each alternative:
   - The various cleanup technologies and the location (site unit if applicable) where they could be used;
   - The estimated range of volumes to be removed, treated, or disposed of based on initial identification of cleanup standards;
   - The general costs of method used to remove, treat, or dispose of material (unit costs).
3. Detailed description of screened alternatives – For the cleanup action alternatives that are retained after screening, a preliminary design and cost estimate will be developed prior to the detailed evaluation and screening. The preliminary design will include volume and area calculations, plan and cross-section as required, treatability studies and treatment facility design if required, and any

required disposal plans. Additional analysis will be included as necessary to fully evaluate the alternatives.

4. Evaluation of screened alternatives – After further development of the cleanup action alternatives retained after screening, a detailed analysis will be conducted according to specific criteria outlined in WAC 173-340-360 and in Section 9.2 of the "Sediment Cleanup Standards User Manual," Ecology 1991, as updated. These criteria will be integrated and used to rate the strengths and weaknesses of each approach to identify a preferred cleanup action alternative.

TASK 4 SEPA COMPLIANCE

The work to be performed under this Order shall conform to the State Environmental Policy Act (SEPA) Rules, chapter 197-11 WAC, as amended on March 30, 1995. The amendment requires the integration of the procedural requirements and documents of SEPA and MTCA.

In accordance with WAC 197-11-253, Ecology is the SEPA lead agency for this site. As lead agency, Ecology has conducted a preliminary evaluation and decided that there is insufficient information available at this time to make a threshold determination regarding future remedial actions at the site.

The following steps will be taken by Douglas and Ecology to fulfill the MTCA/SEPA integration requirements during the FS:

1. Early scoping – At a minimum, drafts of the remediation Work Plan and other project plans will serve as the SEPA scoping documents. The public will be invited to review and comment on these plans in accordance with the schedule included in this FSSOW.
2. Threshold determination – Based on the comments received from early scoping and the draft FS, Ecology will decide whether a SEPA threshold determination can be made regarding remedial actions at the site. If a preliminary determination of significance (DS) is made, the FS will be revised as necessary to address development of an Environmental Impact Statement (EIS). If a threshold determination cannot be made due to insufficient information, or if Ecology makes a preliminary determination that a determination of nonsignificance (DNS) is appropriate, Douglas will submit an environmental checklist (SEPA checklist) to support the final FS. Prior to issuing the draft final FS for public review, Ecology will make a final threshold determination. If a DS is issued regarding the selected remedial action, Douglas will be required to prepare an EIS. Depending on its complexity, the EIS may be included as an appendix to the final FS, integrated with the final FS or prepared as a companion document.

DELIVERABLES

All plans, reports and studies listed below shall be prepared as follows: A draft shall be submitted to Ecology and DNR for review and comment in accordance with Section V of the AO; Ecology and DNR comments shall be addressed and a draft final submitted to Ecology for public review; Ecology, with assistance from Douglas, will prepare a Responsiveness Summary which will be included as an appendix to the final document; Douglas will prepare a final document addressing public comments for Ecology approval. Revisions to final plans shall be in accordance with Section VI of the AO. Modifications to final plans that Ecology determines are not significant will not be subject to public review. The deliverables will consist of the following:

1. FS Work Plan - Douglas shall submit for Ecology review and approval an FS Work Plan in accordance with the schedule below.
2. FS Report – Douglas shall prepare a FS Report (draft and final) in accordance with Task 3, including required SEPA documentation in accordance with Task 4.
3. Additional Studies – Douglas shall submit draft addenda to the FS Work Plan, as well as any other planning documents, reports, and other deliverables associated with any additional studies necessary as identified by Ecology or Douglas in accordance with Section V of this Agreed Order within thirty (30) days of receipt of a written request by Ecology to prepare such documents, unless otherwise specified by Ecology.

SCHEDULE

The schedule for all tasks described in this FSSOW and other elements of the RI/FS is presented in Exhibit 5 of the AO. If, at any time during the RI/FS process, unanticipated conditions or changed circumstances are discovered which may result in a schedule delay, Douglas shall bring such information to the attention of Ecology. Pursuant to Section VI (13) of the AO, Ecology will determine whether a schedule extension is warranted. For every deliverable, report, memorandum, plan, or other item required under this FSSOW, if Ecology disapproves or requires modification or revision of any deliverable, report, memorandum, plan or other item, in whole or in part, Douglas shall submit a modified or revised version thereof to Ecology in accordance with Section V of the AO. Such modifications or revisions may qualify for schedule extensions.

Any deadline that falls on a holiday or weekend will be extended to the next business day.